

Description

ELECTRO-DYNAMIC PRICING EXCHANGE

Technical Field

- [001] The present invention is a novel computer solution. It solves a number of technical problems associated with dynamic pricing systems in the field of electronic commerce. Especially important for negotiating prices of complex multi-variable commodities such as new vehicles or new computers. This is a completely new concept; it is not an obvious solution; it runs on a machine; it has multiple technical effects and as this disclosure will show, it solves significant technical problems.

Background Art

- [002] Pricing is generally considered to be the most critical element in any commercial enterprise. It is also the most difficult to optimize. Economists have always known that setting fixed prices can hinder sales, since some customers are seeking lower prices while others may have been willing to pay more than the asking price. As a result, fixed pricing increases the risk of either leaving money on the table or ending up with unsold inventory.
- [003] Since the advent of the Internet Dynamic Pricing Systems have become the most extensively researched alternative to fixed price systems. Dynamic pricing occurs when prices are free to respond to even the slightest changes in supply and demand. Two common examples of dynamic pricing systems are Internet auctions and electronic stock exchanges. On-line auctions facilitate sales of basic commodities, such as used personal property, used cars, used computers, or surplus inventory liquidations. Electronic stock exchanges facilitate the sales of base commodities such as gold, silver, financial instruments such as corporate shares and derivatives. These examples are considered to be basic commodities because of the absence of any complex variable elements. New vehicles and new computers are examples of complex multi variable commodities because they are usually offered with a number of variable components, which must be resolved during the sales process.

Disclosure of Invention

Technical Problem

- [004] Existing computing technology is not capable of co-ordinating multi-variable order (re)configurations when combined with dynamic pricing systems. There is no practical method for different traders or bidders to select or deselect their own unique set of model variations and optional equipment 'on-the-fly' while competing in the *same* bidding process. Some auction operators make an attempt to offer brand-new multi-variable products but each variation has to be a distinctly separate auction process. The

effect of this dissection is to spread a limited pool of bidders over a large number of different auction sales and by so doing, drastically dilute support for each individual sale. This is hopelessly inefficient and fails to exploit the most important advantage of dynamic pricing, which relies on multiple competitive bidding to ensure accurate free-market pricing.

Technical Solution

- [005] The present invention (also referred to as "DPX") was initially designed to overcome the inability of computer systems to manage "real-time" dynamic pricing transactions of multiple item complex orders for new vehicles and new computers, but can be applied with equal benefit to anything with multi-variable characteristics. Such products are typically offered for sale with a variety of optional features, selectable by the purchaser. An average vehicle could have as many as a hundred variable features, (see drawing 5). A wholesale order for just 10 vehicles could contain over a thousand variables which must all be resolved during the sales process. Selecting or deselecting such a vast number of variables during a live unmanned electronic bidding process has previously proved impossible. The present invention contains an infinitely variable product option selector apparatus and an auto-dynamic pricing synchronizer device, which drastically cuts the processing time and solves the problem completely .

Advantageous Effects

- [006] The DPX empowers buyers and sellers of new vehicles, new computers, or anything else with multiple choice features to select or deselect any possible options, completely '*on-the-fly*' and trade instantly at the current market prices, or to simply modify the order and by so doing submit a new order which is then posted to a perpetual bid/offer matching engine. The order may be matched instantaneously or it may be reviewed and accepted by any other registered trader. Orders are continuously ranked in order of priority sequence selected by the client viewer. The key commercial advantage of this system is that it has the propensity to create spontaneous and exponential growth in client numbers because each respondent must register as a client to answer or counter-bid any offer received. These characteristics show another very important distinction between prior art and the subject invention. The present invention not only solves a significant problem for auctions and stock exchanges, but goes much further. The preferred embodiment is therefore not an Internet style auction at all. It is closer to a financial trading exchange but still quite different. It employs a much more efficient and completely revolutionary system for exploiting the power and *universal* application of dynamic pricing systems.

Brief Description of the Drawings

- [007] Drawing 1 shows a general overview of a sales listing procedure and the sequence

of events labelled as follows:

- [008] (1) Site Administrator lists the most basic versions of the products available, with no optional features included.
- [009] (2) A full list of all optional equipment, recommended prices, and estimated delivery dates for all available options is added.
- [010] (3) Digital photographs can also be included, showing how the products would appear after each model variation or visible feature has been added, including different viewing angles.
- [011] (4) Seller can also provide all their product costing information so that the system can monitor every transaction to calculate instant profit and loss figures for automated negotiation protocols. At this point the product is basically ready for trading.
- [012] (5) Trader may then select any components, variations and quantities required.
- [013] (6) Product image changes to reflect each traders unique selection of colours and optional features. Depending on commodity different angles and multimedia presentations are also available for viewing.
- [014] Drawing 2 shows the most simple tabular view of a new order using the infinitely variable configuration apparatus. The number of columns and rows are infinitely expandable. For the purpose of explanation each column is labelled with letters of the alphabet and each row is labelled numerically. Cells are referred to by their intersect label. For example; the cell at the intersect of column 2, line 3 would be identified as B3. This example order shows a typical new vehicle transaction. It shows the most simple order for just one base vehicle shown on line 4 and one additional option selected on line 5. (See check boxes ticked in column D). As each component is added from the new pull down menu created in column "A" an additional row is automatically added, ready for the next item selection, and so on, until all required components have been added. Different product specifications are grouped in separate columns to maintain detail order integrity. In this example only one column (C) has been activated. Starting prices are automatically posted from the system database. Typically the manufacturers recommended selling prices. After configuring the order by simply selecting items from pull down menus and ticking applicable columns the trader would then enter the quantity (C7), then enter their bid or offer (B16) and click buy or sell (B17) to post the order to the perpetual bid/offer matching engine and dynamic order book viewer shown in drawing 4.
- [015] Drawing 3 shows the full power of the DPX's infinitely variable and dynamic product configuration apparatus. The sample table depicts a much more complex order than that shown in drawing 2. Many optional features are selected (A4:A24) and numerous product column groups have been created (C:H). Each order has a unique tracking code (A1). Item description fields also contain "info" links to full detail speci-

fications and pictures of items selected. Cell B4 through B24 show the current prices for all items shown in rows A3:A24. Column and rows shown from C4 through H24 represent selection boxes for adding or deleting optional items to each column group. Row 25 shows the total calculated unit price for each column group. Trader enters the required quantities for each product group on row 26. Row 27 shows the calculated total for each column selection. Cell B29 shows the total net order value. Cell B30 would automatically show any taxes payable according to the status of bidder. Cell B31 shows the total including any taxes. Cell B32 shows the deposit due on sale according to trader status. Cell B33 shows the total balance payable upon delivery. Row 28 shows the estimated availability date for delivery of the product according to the selection of features matched against the suppliers current delivery schedule for the slowest item selected. This cell is continuously updated whenever a column selection changes or the supplier updates the database delivery schedule. Cell A34 contains a pull down menu for bidder to select the display currency of their choice. Cell B35 is the main bid/offer input field. After the amount is entered the trader clicks the buy or sell button (B36) to confirm and post the order to the perpetual bid/offer matching engine and order book viewer. **IMPORTANT:** When the bid amount is edited in cell B35 every single price in the entire component catalogue changes in perfect unison at precisely the same rate of change. This applies to all items available to client(s), whether actually selected by trader or not. This key engineering technique is what enables infinitely variable product reconfiguration "on-the-fly" at any time during a competitive dynamic commerce transaction, always maintaining absolute integrity of pricing ratios throughout the entire order. This is especially important for dynamic pricing systems, such as on-line auctions or other dynamic pricing exchanges. Without such a system universal application of dynamic pricing and auctions of multi-variable items would not be possible in a single competitive sales process. This is an important advance and key distinction from any prior art.

[016] Drawing 4 shows the Perpetual Bid/Offer Matching Engine with a dynamic ranking order book viewer. Whenever new orders are posted they appear on this viewing system in ascending or descending order according to user settings for any column. Traders can see a general description of any order simply by hovering a mouse pointer over the bid/offer price. Any order can be clicked open, modified and reposted as a new order, deleted (by the owner), or accepted by any registered trader. The matching engine searches continuously for exact or closely matching buy/sell orders and alerts traders using pre-arranged contact methods.

[017] Drawing 5 shows a typical, but by no means extravagant list of variable features available for just one single new automobile. In this case over 90 different variables must be resolved during the sales process for each such vehicle. All chargeable items

must be re-priced in equal ratio to each other every time a bid or offer changes during an auction or other dynamic pricing process. This can happen many times a minute.

Best Mode for Carrying Out the Invention

[018] The best mode for the invention is in the form of a Universal d-commerce exchange using the perpetual bid/offer matching engine as described in this disclosure. The *Universal d-commerce* exchange concept differs from any other commodities exchange in several key respects. The most critical being that a traditional commodities exchange has no technology available to manage dynamic product variables, whereas the subject invention can handle any number of variables "on-the-fly". It is therefore ideally suited for trading multi-variable commercial products such as vehicles and computers.

[019] Essential and distinguishing features of the invention are as follows:

[020] An infinitely expandable product order configuration system where interactive columns are automatically added to allow multiple groups of dissimilar products to be ordered simultaneously. An infinite number of rows can also be added automatically after each of any number of available component options are selected from pull-down menus.

[021] A dynamic pricing system which can recalculate the prices of each and every item on any size order, completely in unison and precisely equal ratio to each other, from input by client to just one small entry field, the total bid or offer price. It will also recalculate the entire order automatically when the order is changed in any way.

[022] A Perpetual bid/offer matching engine and electronic order book system which receives all posted orders. It then ranks and displays the orders in any sequence selected by the client. The system can match buy/sell orders automatically or alert traders to the closest matches. The viewer can also see the general contents of any order in a pop-up bubble simply by hovering a mouse pointer over any price. The client can select any order from the electronic order book to open in full detail view. They can then either accept the order by confirming a purchase or sale, or they could modify the order, thus creating another new order and post it to the order book. Traders can also delete their own orders any time before acceptance by another trader.

[023] A system to search and find orders matching requirements.

[024] The preferred DPX embodiment also employs a unique combination of operating techniques as follows:

[025] A unique system for processing payment from buyers on behalf of vendors. It provides a fully integrated and insured *escrow service for every transaction, thus eliminating the risk of fraud or non payment of debts. Prior to placing a bid buyers must first authorize an electronic funds transfer or EFT payment into their escrow

deposit account equal to a pre-determined percentage of estimated trading requirements. After an order is accepted the required down-payment is automatically transferred from the buyers deposit account to the escrow transaction account. Closing instructions are then drawn and confirmed. Payments are held in neutral escrow pending completion of both buyer's and seller's obligations, then transferred to seller account. *For purposes of this disclosure the term "escrow" is defined as "any transaction wherein one person, for the purpose of effecting the sale, transfer, encumbering, or leasing of any property to another person, delivers any written instrument, money, evidence of title to real or personal property, or other thing of value to a third person to be held by such third person until the happening of a specified event or the performance of a prescribed condition, when it is then to be delivered by such third person to a grantee, grantor, promisee, promisor, obligee, obligor, bailee, bailor, or any agent or employee of any of the latter."

- [026] The DPX can also facilitate the trading of "Call" or "Put" Options on applicable commodities. Approved buyers can convert their down-payment into an option-premium payment. The option-holder may then have an extended period of time to either exercise the option, pay and take delivery of goods, with credit for any remaining value of option premium, or sell and/or assign the option to anyone else, or even allow the option to expire, without any further obligations.

Mode for the Invention

- [027] The inventor believes that the Universal d-commerce exchange including the Perpetual bid/offer matching engine is a far more practical and efficient system for mainstream electronic commerce and sales of brand new goods. However new merchandise can also be sold very effectively through Internet auctions and other dynamic pricing systems, as long as the DPX technology is used to solve the problem of negotiating variables "on-the-fly" during a bidding process.
- [028] Thus, a method and system for deploying an infinitely variable free-market trading system, serving all types of buyers and sellers communicating via an electronic network is disclosed. Although the present invention has been described with reference to specific exemplary embodiment, it will be apparent to those of ordinary skill in the art that various modifications, augmentations or alternative applications may be implemented to this embodiment without departing from the broader spirit and scope of the invention as set forth herein.